Docket No.: PF-0420-2 DIV

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### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Magna et al.

Title: HUMAN NUCLEOTIDE PYROPHOSPHOHYDROLASE-2

Serial No.: To Be Assigned Filing Date: Herewith

Examiner: To Be Assigned Group Art Unit: To Be Assigned

### Official Draftsman

Commissioner for Patents Washington, D.C. 20231

### SUBMISSION OF FORMAL DRAWINGS

Sir:

Transmitted herewith are Figure(s) 1A, 1B, 1C, 1D, 1E, 1F, 1G, 1H, 1I, 1J, 1K, 2A, 2B, 2C, 3A, and 3B, as sixteen (16) sheets of formal drawings for this application. Each sheet of drawing indicates the identifying indicia suggested in 37 CFR Section 1.84(c) on the reverse side of the drawings.

Applicants believe that no fee is due with this paper. However, if the Commissioner determines that a fee is necessary, the Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. **09-0108.** A duplicate copy of this communication is enclosed.

If there are any questions regarding the above, the Examiner is invited to call the undersigned at 650-855-0555.

Respectfully submitted,

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Date: 09 January 2001

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54 ATG M	108 GGG G	162 GAA E	216 GAG E	270 GAC D	324 CCG P	378 GTC V
၁၁၅	GCG A	$\mathrm{crg}$	GAA E	9 299	TGC	GCC
ອວວ	$ ext{CTG}$	9 299	TGG W	GAC D	GTG V	TCC GCC
45 GCC	99 CAC H	153 CTG L	207 GAC D	261 GGC G	315 CGC GTG R V	369 CCG P
ICT	GCG	GCA A	CTG GAG L E	CCC GGA P G	GCG	$^{ m CTG}_{ m L}$
၁၅၁	GCT A	ACT T	CTG L	CCC	CCA P	GCC
36 : GGA CGC '	90 GTC V	144 GCG A	198 GCC A	252 CAC H	306 GGG G	360 TGG W
CTC	GTC	ATG M	CCA P	GAC	${\tt TAC} \\ {\tt Y}$	GAC
LCC	TGT C	CCA P	TCA	GTG V	TAC Y	ACG
27 ACC	81 CTC L	135 GAG E	189 CCC P	243 AAC N	297 TTC F	351 ACC T
990	TGT	GAG	CAG Q	TTC	CGC R	CGC R
၁၁၅	CTC	ACC	9 9	TGG W	ATC I	GCG
18 GGA	72 CTG L	126 CCC P	180 ACC GGC T G	234 TCC S	288 GCC A	342 GAG (
၁၅၁	CCA	ACC	${\tt TAC} \\ {\tt Y}$	ACG T	GCT	$\mathop{\mathrm{CTG}}_{\mathrm{L}}$
292	$ ext{CTG}$	GCC A	GTG V	TGG W	CTG	GCG
9 GCA	63 CTG L	117 GAC D	171 TCC S	225 GAG	279 AGC S	333 CTG L
CGA	TCG	CGA R	CGG R	AGC S	GAG	CCG
သည	GCG	GCC <b>A</b>	AGA R	GCC	TTC	333 CGA CCG CTG GCG C R P L A I

FIGURE 1A

432 GAG E 486 CTA L L 540 GGG G C C C C	702 ACC T	756 GGC G
CGC CCA CCA TGT C C GCG A A	GTC V	CCT
AAC N TGC C S S S GAT D C CCA	GTG V	CAG Q
423 CTC L L 477 CGC R 531 GGG G G	693 TCG S	747 GAC D
TGC C C F TTC F F C C C C C C C C C C C C		CGA R
TGG  CGC  R  TGC  C  CCC  P  CCCT	CTG L	CTG L
414 TTC F 468 GTG V V 522 CCC P 576 AGC S 630	684 CTC L	738 TCC S
GGC G CAC H GGT G CCA P	ATC	GTC V
CGC TAC Y W W TGG C C C	CAC H	AGG R
405 ACG T 459 AAC N 513 CCG P 567 CAC H	675 GAC D	729 GCC A
CCC PP TCC S S GGC GGC CAG CAG CAG	CCG	GGA G
AAC N TGC C C C C C C GCG	TGC	CTA L
396 L L 450 CGC R 504 GCG A 558 CGC R	666 GAA E	720 CTG L
CAC H CGC R TTG L L CTG L	TGT	CCA
GTG GGC G G CGC R CGC R	ACC	CAA Q
387 CGC R 441 CGT R 495 TCG S 549 CGT R	657 GAC D	711 GGG G
GAG CCG P A A GGC GGC GGG GGG	CTT L	TCT
GGC GAA GAA CCCAA	AGC	CCA

# FIGURE 1B

810 GCT A	864 GCC A	918 TTG L	972 CAG Q	1026 TCC S	1080 CAC H	1134 GCA A
TGT C	GAG	AAG K	9	TAC	GCC	AAG
GTC V	GGG	GAT D	GCT A	AAA K	999	TGC
801 GGT G	855 GCA A	909 CTT L	963 GAG E	1017 AAG K	1071 TAC Y	1125 CAC H
CCT	TCT	ATC	CGA R	CCC	9999	TAC
GTG V	TTC	ATC	GTG V	ATG M	CAT H	ATC
792 CGG R	846 GGC G	900 ACC T	954 CGA R	1008 CCC P	1062 GCT A	1116 GGC G
TTC	GAT D	GTC V	TCC	ACC	CGA	GCT
ACC T	ATG M	GTG V	GAG	999	AGG R	CAG Q
783 GGA G	837 CAG Q	891 TCT S	945 CCT P	999 TCC S	1053 GAC D	1107 GAC D
CAC H	GCC	ATC I	CAC	GCC	CTG	CCA
GCT A	AGG R	TCC	AAA K	AAA K	CTG	CGC R
774 GAT D	828 ATC I	882 GGA G	936 GTG V	990 TGC C	1044 ACC T	1098 CTG L
AGC	AAC N	AAC N	$ ext{CTG}$	TGC	999	GGA
ACC	GCC	GCC	TAC	TTC	AAT N	CGG R
765 GCC A	819 CGC R	873 CAG Q	927 CCG P	981 ACT T	1035 CAC H	1089 CTS L
GTG V	AGC S	GCC	AAG K	GTG V	1035 1044 1053 1062 1071 1080 TGG TTC CAC AAT GGG ACC CTG CTG GAC AGG CGA GCT CAT GGG TAC GGG GCC CAC W F H N G T L L D R R A H G Y G A H	GAG
ACT T	GAC D	CAG Q	GAG	AAT N	TGG	CTG

### FIGURE 1C

GCC A	1242 CCT P	1296 TGT C	1314 1323 1332 1341 1350 CGC TGC CCC AGC CCC CGC TGC GGG GAC GCC R C P S L A G S S P R C G D A	1404 CCT P	1458 CTG L	L512 CCG P
CTT L	CTC L	CTC L	GAC D	TGC	TGT	GAG
GTA V	AAG K	9 299 3	999	CAC H	AAG K	999
179 ACT T	233 ATC I	.287 GTG V	341 TGC C	.395 ATT I	449 CAG Q	.503 TCC S
1 CTC L	1 CTG L	1 GAT D	1 CGC R	1 GAG E	1 TGC C	1 GAC D
CGG R	TAC Y	CTG	CCC	AGG R	9 299	GCT
1143 1152 1161 1170 1179 1188 TGG AAT GAG GCG GCG CTC ACT GTA CTT GCC W N E A G A V R S G T A R L T V L A	1206 1215 1224 1233 1242 CCA GCC TGC GGCCC CGA GAG TAC CTG ATC AAG CTC CCT PACT CTG ATC AAG CTC CCT CTG ATC AAG CTC CTG AAG AAG AAG AAG AAG AAG AAG AAG AAG A	1251 1260 1269 1278 1287 1296 GAG GAC TGT GGT CCA GGT AGT GGC CCT GCC TAC CTG GAT GTG GGC CTC TGT E D C G Q P G S G P A Y L D V G L C	.332 AGC S	.386 AGA R	1422 1431 1440 1449 1458 CTC CCA GTG AAG GTG GCA GAG TGT GGC TGC CAG AAG TGT CTG L P V K V V A E C G C Q K C L	.494 GCT A
1 ACT T	1 CGA R	1 GCC A	1 TCC S	1 GAG E	1 GAG E	1 GTG V
9 299	CCC	CCT	9 9	CTG	GCA	GTT V
1161 TCG S	1215 CGG R	1269 GGC G	1323 GCA A	L377 CGT R	L431 GTG V	1485 CGT R
CGC R	CCC P	1 AGT S	CTG	CGC R	ote GTG V	GGC G
GTG V	GAC D	GGT G	AGC S	GTG V	AAG K	CGG R
1152 GCC A	1206 TGC C	CCA P	1314 CCC P	1368 TCT S	1422 GTG V	L476 GTC V
GGT G	GCC A	CAG Q	TGC C	TGC C	CCA P	CTG L
GCG	CCA P	GGT	CGC R	TGC	CTC L	999 9
1143 GAG E	1197 CAG Q	1251 TGT C	1305 ACC T	1359 CGC R	L413 GTC V	1467 CGG R
AAT N	GGC G	GAC D	GAC D	TCC S	TAC Y	CCT P
TGG W	1197 CCA GGC CAG C P G Q P	GAG	1305 CCC GAC ACC C P D T R	1359 AGC TCC CGC 1 S S R C	1413 GGC TAC GTC C G Y V L	1467 CCC CCT CGG G P P R G

FIGURE 1D

TAC Y	1620 3 ACT T	1674 GAT D	1728 CCG P	1782 A GAT D	1836 GAC D	1890 CGA R
GCC	GTG V	TTT F	GCC	GAA	GCC	CCC
ACC T	GTG V	CCT	aaa K	CTG L	AGA R	GAC D
1521 1530 1539 1548 1557 1566 CTA CGC TTC GCC TAC GCC TAC GCC TTC GCC TAC TAC TTC ACC GCC TAC TAC TAC TAC TAC TAC TAC TAC TAC T	CAG GGC GAC TTT ACC ATT GAG GTG CCG CCC TCC ACC CAG CGG CTG GTG GTG ACT Q R L V V T	1629 1638 1647 1656 1665 1674 TTT GTG GAC GCT GTC CGG GTC TTG CCT TTT GAT F V D P S G E F M D A V R V L P F D	1683 1692 1701 1710 1719 1728 CCT CGA GGT GCC GGC GTG TAC CAC GAG GTC AAG GCC ATG CGG AAG AAA GCC CCG PR G A G C CCG A G C CCG A G C C CCG A G C C CCG A G C C C C	1737 1746 1755 1764 1773 1782 GTC ATT TTA CAT ACC AGC CAG AGC AAC ACG ATC CCC CTG GGC GAG CTG GAA GAT V I L H T S Q S N T I P L G E L E D	1791 1800 1809 1818 1827 1836 GAG GCG CCC CTG GCG CTG CCT TCT GGC GCT TTC CGC AGA GCC GAC E A P L G E L V L P S G A F R A D	1845 1854 1863 1872 1881 1890 GGC AAA CCC TAC TCG GGG CCT GTG GAG GCC CGG GTG ACG TTC GTG GAC CCC CGA GGC CCC CGA ACG TTC GTG GAC CCC CGA GCC CGG GTG ACG TTC GTG GAC CCC CGA GCC CGA GCC CCG GTG ACG TTC GTG GAC CCC CGA GCC CCG GTG ACG TTC GTG GAC CCC CGA GCC CCC CGA GCC CCC CGA GCC CCC C
		GTC	CGG R	9 299	TTC	TTC
ATC I	CAG Q	CGG R	ATG M	CTG L	GCT A	ACG T
548 CCC P	1602 ACC T	.656 GTC V	1710 GCC A	1764 CCC P	1818 GGC G	1872 GTG V
1 GAG E	1 TCC S	1 GCT A	1 AAG K	) ATC I	TCT	CGG.
CAG Q	CCC	GAC D	GTC V	ACG T	CCT	GCC
.539 GGC G	1593 3 CCG P	.647 ATG M	L701 GAG E	1755 AAC N	1809 CTG L	1863 GAG E
1 CTG L	1 GTG V	1 TTC F	CAC H	AGC S	GTC	GTG
CTG L	GAG E	GAG E	TAC Y	CAG Q	m CTG	CCT
.530 ATT I	.58 <b>4</b> ATT I	.638 GGT G	.692 GTG V	1746 AGC S	1800 GAG E	1854 GGG G
1 AGG R	1 ACC T	1 AGC S	1 GGC G	ACC T	ا 1990 19	TCG
GCC	$ ext{TTT}$	CCC	GCC	CAT H	$\mathrm{CTG}$	TAC
.521 TTC F	.575 GAC D	.629 GAC D	.683 GGT G	1737 TTA L	1791 CCC P	1845 CCC P
1 CGC R	1 GGC G	1 GTG V	1 CGA R	1 ATT I	GCG	AAA K
CTA L	CAG Q	TTT F	CCT	GTC V	GAG	9 9

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FIGURE 1E

14	Ç	-	8 D		52 3C		90	<b>J</b> C		50	.5		14	ľC		89	IG	
1944	GZ C	1	1998 GCG	€	205 GG	Ø	2106	Z z	2	210	<u> </u>	Ω	22	Ā	Н	2268	ڻ در	$\triangleright$
	AGC	2	CGT	<b></b>	gcc	Ą		CTC	٦	( {	TC	ß		GA(	t <del>r]</del>		$_{ m LL}$	ĮΤι
	GAC AGC GAC	۲	1998 CTC CGT GCG	<b>-</b> 1	2016 2025 2034 2043 2052 GAG CAG CTG CAG GTG GGG CCG GTG GCG GTG CGG GTG GCC GTG CGG GTG GCC GCC	Λ		ATG CCA GGC CAC GTG GAG GCC CTC AAG CTG TGG TCG CTG AAC	Ω	2124 2133 2142 2151 2160	999	ග	2187 2196 2205 2214	$\mathtt{GTG}$	>		AAT CTG GAC GTG CCT GAG CGC CGC CGC TGC TTC GTG	ບ
1935	TCT GCC CCC AGT GAC CTG CGC TTC GTG	>	1989 TCC GTG GAC	<b>a</b>	20 <b>4</b> 3 CGG	R	2097	TGG W	<b>≤</b>	$\frac{2151}{2}$	GAG	団	2205	AAC	z	2259	၁၅၁	껖
Π-	TTC	4	GTG	>	GTG	>		CTG	4		CGC	ĸ	``	299	Ŋ	•	CGC	Ω.
	CGC	4	TCC	ഗ	၁၁၅	Ą		AAG	<b>4</b>	i	CGG	<b>K</b>		$\operatorname{GTG}$	>		CGC	<b>~</b>
926	CTG	<b>1</b>	1980 ATG TTC 1	Īτι	034 GTG	>	8807	CTC	<b>-</b> 1	142	$T^{T}C$	ĬΤΙ	2196	CTG	IJ	2250	GAG	凹
-	GAC	٦	1 ATG	Σ	500	Ъ	(4	CCC *	A	(1	CGC	Ö		TTC	ഥ	, ,	CCT	ርፈ
	AGT	Ω	၁၅၅	r D	999	Ŋ		GAG	ম		AGC	Ŋ		GTC	>		$\operatorname{GTG}$	>
.917	CCC	<b>у</b>	1971 CGC ACC TAC GGC	7	2025 GTG	>	2079	GTG	>	2133	GAG	田	2187	၁၅၁	ĸ	2241	GAC	Ω
	GCC	₹	1 ACC	E	CAG	ø	.,	CAC	H		GAG	ഥ	•	GAG	闰		CTG	LI.
	TCT	Ω	၁၅၁	<b>K</b>	CTG	IJ		GGC	r U		GAG	[T]		GAG	Ħ		AAT	Z
1908	909	₩	1962 . CTG	J	:016 CAG	α	070	CCA	ሲ	2124	TGG	M	2178	CGG	ĸ	2232	TTC	ĮΤΙ
7	929	Ą	CCA	Д	GAG	田	.,	ATG	Σ		TTG	ı	•	GTG CGC CGG	<b>~</b>		CTG	I E
		N.	GCT	K	BOB	Ą			н		ggC	Ŋ		$\operatorname{GTG}$	>		CGC	ra M
1899	ACC	<u> </u>	1953 CTG	L1	2007 TCC	Ŋ	2061	ATC	Н	2115	ACC	H	1169	CGG	24	2223	GAG CGG	Я
τ-1	CTC	ц	GAG	闰	2 GGC	Ŋ	2	Ŋ	a	(1	CCC GAG ACC	田	(1	990 000	Ъ	(1	GAG	田
	GAC CTC ACC	Ω	Sec	හ	CCC	P G S		AGC	ß		CCC	Д		CGC	Ŋ		CGG	民

FIGURE 1F

2295 2304 2313 2322 AAC GAC AAG TTC ACC CCC AGC GAG CAG GTG GAG GGC N D K F T P S E Q V E G	2376 GCC AAC CCC A N P	2394 2403 2412 2421 2430 CGC TTT GAC AGC GCG GTC ACC GGC CCC AAT GGC GCC TGC CTC R F D S A V T G P N G A C L	2448 2457 2466 2475 2484 GAC GCC GAC AGG CCA GAC GCC TAC ACC GCC CTG GTC ACC GCC D A D R P D A Y T A L V T A	2511 2520 2529 2538 CTG GAG CCG CCT TCC TTG CCC CGC CCA CTC CCG L E P A P S L P R P L P	2556 2565 2574 2583 2592 GTC ACC CAG CCC TAC CTG GAC AGG CTG GGG TAC CGT CGG ACG V T Q P Y L D R L G Y R T	2610 2619 2628 2637 2646 CCC GCC TTC AAG CGT AAC GGC TTC CGC ATC AAC CTC GCC AAG P A F K R N G F R I N L A K
GTG G	GCC A	GCC 1	GTC 1	CCA (	CGT R	CTC
2313 . CAG Q	2340 2349 2358 2367 CTG GTC GCC CCC GGC TTC TCC L V N L E P A P G F S	2421 GGC	2475 CTG	2529 3 CGC R	2583 3 TAC Y	2637 2 AAC N
GAG E	TTC	AAT N	GCC	CCC	999	ATC
AGC S	9 299	CCC	ACC T	TTG L	CTG	CGC R
2304 CCC P	2358 CCC P	2412 GGC G	2466 TAC Y	2520 TCC S	2574 AGG R	2628 TTC F
ACC	GCC	ACC	GCC A	CCT	GAC	9 299
${f TTC}$	CCC	GTC V	GAC D	GCC	$_{\rm CTG}$	AAC N
295 AAG K	349 GAG E	2403 GCG A	2457 CCA P	2511 ; ccG P	2565 TAC	2619 CGT R
2 GAC D	CTG L	AGC S	, AGG R	GAG	CCC	AAG
AAC	AAT N	GAC D	GAC D	$\operatorname{CTG}$	CAG Q	TTC
2286 : GCC A	340 GTC V	.394 TTT F	:448 GCC A	2502 GAG E	2556 ACC T	2610 GCC A
TAC Y	2 CTG L	2 CGC R	GAC D	2502 GAG GAG C E E I	GTC V	CCC
GCC	ACG	9 299	TGC	1990 1990	9 299	GAT D
2277 ; CGC R		2385 TGG W	2439 TTC F	2493 GGC	2547 : GTG V	2601 GAC D
2 GTG V	2331 GTG GTG GTC V V V	2385 CGT GCC TGG R A W	2439 CCC GCC TTC P A F	2493 ACC CTG GGC T L G	2547 GCC ACC GTG A T V	2601 GAC CAC GAC D H D
2277 AAG GTG CGC K V R	GTG V	CGT R	CCC	ACC	GCC	GAC

## FIGURE 1G

2700 TGG CGC AGC W R S	2754 TTC GCC AGG F A R	2808 CCT P	2862 CGG R	2916 TCC S	2970 CGG R	3024 GTG V
2 CGC R	GCC A	ACA T	TTC F	CGC R	CTT	TGC
TGG W	${ m TTC}$	9 299	GAG E	GTC V	GGA G	GCC
2691 GTG TAC CCG 1 V Y P	2718 2727 2736 2745 CAG GGG GCC CCG GTG ACT GCC AGC CAC TTC CGC Q G A P V T A S H F R	2799 2808 TTC CGA GAG GGC ACA CCT F R E G T P	2826 2835 2844 2853 2862 ACT GGC GAT CTC CTG GCC TGG TGG CCC AAC CCG CAG GAG TTC CGG T G D L L A W W P N P Q E F R	2916  AAG ATC CAG GGT CCC CAG GAG TAT ATG GTC CGC TCC  K I Q G P Q E Y M V R S	2934 2943 2952 2961 2970 GGG GGC AGC CAC CGC GGC CAG CTC TAC GGA CTT CGG G G S H P R T R G Q L Y G L R	2988 2997 3006 3015 3024 AGT GTG CGA GCC GAG CGT CCG GGC ACC TCG GCA GCC TGC GTG S V R D P E R P G T S A A C V
TAC Y	TTC	CGA R	CCG	TAT Y	CTC	TCG
GTG V	CAC H	TTC	AAC N	GAG	CAG Q	ACC
682 CCT P	736 AGC S	790 CCC P	844 CCC P	:898 CAG Q	2952 GGC G	3006 GGC G
2682 AAT GGG CCT G N G P V	2 GCC A	2790 GAG TAC AAC GTG GTC CCC E Y N V P	2 TGG W	2 CCC P	2 CGC R	S CCG P
AAT N	ACT T	GTG V	TGG W	GGT G	ACC	CGT R
2673 GCC GAG GCC A A E A N	727 GTG V	781 AAC N	835 GCC A	2889 CAG Q	2943 . cgc	2997 GAG E
2 GAG E	2 CCG P	2 TAC Y	2 CTG L	ATC I	CCA	CCC
GCC	GCC	GAG	CTC	AAG K	CAC H	GAC
664 CCC P	718 GGG G	2772 3 TAC Y	.826 GAT D	2880 GTG	2934 AGC S	2988 CGA R
2 GAC D	2 CAG Q	2 AAG K	2 GGC G	AAG K	399 8	GTG V
2664 GGT GAC CCC G G D P A	Jg (	2772 GAC AAG TAC O D K Y I	ACT	2880 CTC AAG GTG A L K V K	999	AGT S
2655 CCA P	2709 GAA E	2763 GAG GCG C E A I	2817 TCC TGG S W	:871 TTC F	2925 AAC GCA ( N A (	2979 CGG R
2 AGG R	2 CGG R	2 GAG E	7 TCC S	TGC	AAC N	GCC
2655 CCC AGG CCA G P R P G	2709 CTG CGG GAA T L R E C	GTG V	GCC A	2871 GCC TGC TTC ( A C F I	CAC	2979 GAT GCC CGG 1 D A R S

FIGURE 1H

3078; CTG	3132 CTT L	3186 GCC A	3240 ACT T	3294 TTT F	3348 GCC A	3402 AGG R
ACG T	CTC	GCT	TAC	TGC	ACA T	CAG Q
AGG R	GGA	CCA	GTC V	CGC R	9 9	${ m TTC}$
3042 3051 3060 3069 3078 TGC AGC GGG ATG CTG TTC GAC CAG CGG CAG GTG GAC AGG ACG CTG C S G M L F D Q R Q V D R T L	3105 3114 3123 3132 ATG CCC CAG GGC AGC TGC CGG CGC GTG GCC GTC AAC GGA CTC CTT M P Q G S C R R V A V N G L L	3150 3159 3168 3177 3186 CTG ACC CGG CAC CCC CCA CCG GTG CCC GCG GAG GAC CCA GCT L T R H P P V P A E D P A A	3195 3204 3213 3222 3231 3240 TCC ATG CTC CTC CTC CTC CTC CTC CTC CTC CTC C	3249 3258 3267 3276 3285 3294 GTC ACT GAC CAG AGC CCA CGC TTG GCC AAG GAG ATC GCC ATT GGC CGC TGC TTT V T D Q S P R L A K E I A I G R C F	3339 GCC A	3357 3366 3375 3384 3393 3402 GTC ACC TTC CAG TGC CGG GAG CCG GCC GGA CGA CCC AGC CTC TTC CAG AGG V T F Q C R E P A G R P S L F Q R
GTG	GTC	GAG	TAT Y	ATT I	GAT D	AGC S
CAG Q	GCC	GCG	AAC N	GCC	GCT A	CCC
:060 CGG R	5114 GTG V	3168 CCC P	3222 CAC H	3276 ATC I	3330 AAG K	3384 CGA R
3 CAG Q	CGC R	GTG V	9 299	GAG	ATG	GGA
GAC D	CGG R	CCG	$^{ m CTG}$	A.A.G K	GAG E	GCC
.051 TTC F	105 TGC C	159 CCA P	1213 CCT P	3267 GCC A	3321 AGA R	3375 CCG P
3 CTG L	3 AGC S	S CCC P	3 GAC D	TTG L	TCC	CCA
ATG M	9 299	CAC H	$\operatorname{CTA}$	CGC R	TTC F	GAG
042 GGG G	096 CAG Q	150 CGG R	204 CCC P	258 CCA P	312 GGY G	3366 CGG R
3 AGC S	3 CCC P	3 ACC T	3 GCC A	3 AGC S	GAC	TGC
TGC	ATG	CTG	$ ext{CTG}$	CAG Q	TCT S	CAG Q
3033 AAG K	3087 ATT I	3141 TAC Y	195 ATG M	249 GAC D	3303 TCC S	3357 TTC F
TTC	ACC	3141 GAT TAC C D Y I	3 TCC S	3 ACT T	GGT G	ACC
GAG	GTG V	CGG R	TTC F	GTC V	GAT D	GTC V

FIGURE 11

3456 AGC GAG S E	3501 3510 CGC ACC CGC GGT AGG R T R R G R	3564 ACT CCT	3 <b>6</b> 18 CCC AGG	3672 GAA CCC	3726 TAT GGA	3780 TCA ACC CTA	3834 CGT GCG TAT
ATG M	CGG R	CAG	CTC	CAA	TGG		
3447 CGC AGG GAG R R E	3501 ACC CGC T R	3555 TCC CTC	3609 AGC CCC	3663 GTC AGA CAA	3717 GCT GTG	3771 CGA CGT	3825 ACT TCT
AGG R	ACC	TCC	AGC		GCT		
		ACC	GAC	AGA	GTT	GGA	CTG
3438 ATC I	3492 CCC CTC P L	3546 TTT CCC ACC	3600 TCT CCA	3654 GAA CTC	3708 ATT	3762 CCC AGG	3816 CCG TCT
GAC D					ACA		
GGT	GGT G	၁၅၁	TCT	CCA	AAG	GCA	AAG
3429 GCA CTT A L	3483 CGG GCC TCA GGT R A S G	3537 GG CCT	3591 CCT CCT	3645 CCC TTT	3699 3708 ACC AGG AAG ACA ATT GTT	3753 GGG CCA GCA	3807 GCT CAG
ACA G T A	CGG GC R A	CAG G	၁ ၁၁၅	ລອລ	AAC A	CTG G	CCA G
3420 3429 3438 TCC CCG GCG ACA GCA CTT GGT GAC ATC S P A T A L G D I	3474 CAG GCC Q A	3528 3537 CCT GGG CAG GGG CCT CGC	3582 AGT TTT	3636 CTT TCC	3690 GGT AGA AAC	3744 GTG ACT	3798 CCG CTC
TCC	GCA A	TGA	GGA	ລລລ	GAT	ÐDÐ	GAC
3411 CTG CTG GAG L L E	3465 GCG GCG CAG A A Q	3519 GTC CGG CAG V R Q	3573 TTG ACC CCA	3627 TGT CTG GGT	3681 AGA GCA TCC	3735 GAG TTT	3789 TGA AGG
CTG	GCG	GTC	TTG	TGT	AGA	ATG	သည

FIGURE 1J

3888   ACA AAG	39 <b>4</b> 2 GAG CTT	3996 GTG TGA	4050 TCC CAT	4104 CTT AGA	4158 GCT TTA
299	ວວວ	TGG	GGT	GTG	AAT
3879 GCG TTT	3933 CCC TGC	3987 TGG TTG	4041 GGA AGG GGT	4095 TGT TTG	4149 TGA ATT AAA AAT
CTG	GTC	AGC	GGA	ACG	
3870 GGA GTT	3924 GAC CAG	3978 GTG GGG AGC	4032 TGA AAA GGA	4086 ATT CTC	4140 GGG GGC
TTG	CTA	AGT	CAG Q	ACA	TCC
3861 CTA CCC TTG	3915 TCA GTG CTA	3969 AAA CAA AGT	4023 TGG GCC W A	4077 AGG GGA ACA	4131 AGG CCC
CTT	AGC	TTG	9 299	CTG	၁၅၅
3852 TTC AAT	3906 GTT TGG	3960 TAT TTA TTG	4014 4023 TGG GGT CCA GGC TGG GCC CAG W G P G W A Q	4068 CTG GGG CTG	4122 GCG TTG GGC
GAT	CCT	GGT	TGG W	GCT	555
3843 TTT GAC CCT	3897 TCC CCT CTG	3951 TTT TGG	4005 GTG GGG GTG V G V	4059 GCG GGG GAG	4113 GAC CTG CCC
TTT	TCC	TGT	GTG V	ອນອ	GAC

FIGURE 1K

TTT CCA AAA AAA AAA AAA AAA NAA A 3'

4176

RAHGYGAHLELRGLRPDQAGIYHCKAWNEAGAVRSGTARL NTPH-2	336
KHPESRVREAGONVTFCCKASGTPMPKKYSWFHNGTLLDR NITPH-2 MNPETKARRAGOSVSLCCKATGKPRPDKYFWYHNDTLLDP NITPH-1	296 313
ANIRAOMDGFSA - GEAOAOANGSISVVTIILDKLEKPYLV NTPH-2 SILKITKVK FAPIVLTMPKTSLKAATIKAEFVRAETPYMV NTPH-1	257
PSGOPLLGARVSLRDO-PGTVATSDAHGTFRVPGVCADSR NTPPH-2 PGGAPASGAAIYLLTKTPKLLTQTDSDGRFRIPGLCPDGK NTPPH-1	218
QKCVRPRCPGCSL DTCECPDHILLGSVVT NTPH-2 QHCMGQDCTACDLTCPMGQVNADCDACMCQDFMLHGAVSL NTPH-1	189 193
GAWGPWGPCSGSCGP-GRRLRRHCPSPAGDACPGRPLEA NTPPH-2 SPWSPWSKCSAACGQTGVQTRTRICLAEMVSLCSEASEEG NTPPH-1	L50 [
PTRGFWCLNREQPRGRRCSNYHVRFRCP LLEASW NTPPH-2 PREGFWCLNREORPGONCSNYTVRFLCPPGSLRRDTERIW NTPPH-1	117
LAAIRFYYGPARVCPRPLALEARTTDWALPSAVGERVHLN NTPH-2 LDAIRFYYG - DRVCARPLRLEARTTDWTPAGSTGQVVHGS NTPH-1	77 4.
ERRSVYTGOPSPALEDWEEASEWTSWFNVDHPGGDGDFES NTPFH-2 KNPSIFA-KPADTLESPGEWTTWFNIDYPGGKGDYER NTPFH-1	] % %
MASLLPLLCLCVVAAHLAGARDATPTEEPMATALGL NIPPH-2 MVGTKAWVFSFLVL-EVTSVLGRQTMLTQSVRRVQPGK NIPPH-1	

FIGURE 2A

### FIGURE 2B

TVLAPGOPACDPRPREYLIKLPEDCGOPGSGPAYLDVGLC NTPPH-2 IVIASDETPCNPVPESYLIRLPHDCFONATNSFYYDVGRC NTPPH-1
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NIPPH-1	51 PSRRQQRASRGGQRQSGVVASLRFPRVAQQPLIN	1151
		ij
- NTPPH-2 V NTPPH-1	AGTAVTFOCREPPAGRESLFORLLESPA TALGDIR	1096
NIPPH-2 NIPPH-1	56 GHNYGVYTVTDQSPRLAKEIAIGRCFDGSSDGFSREMKAD 71 GHNYGIYTVTDQDPRTAKEIALGRCFDGTSDGSSRIMKSN	1056 1071
NIPPH-2	16 GSCRRVAVNGLLRDYLTRHPPPVPAEDPAAFSMLAPLDPL 31 GSCRRASVNPMLHEYLVNHLPLAVNNDTSEYTMLAPLDPL	1016 1031
NIPPH-2	RSVRDPERPGTSAACVEFKCSGMLFDQRQVDRTLVTIMPQ RSTRDRDQPNVSAACLEFKCSGMLYDQDRVDRTLVKVIPO	976 991
NIPH-2	FRACFLKVKIOGPOEYMVRSHNAGGSHPRTRGOLYGLRDA FRACYIKVKIVGPLEVNVRSRNMGGTHRRTVGKLYGIRDV	936 951
NIPH-2 NIPH-1	HFRFYQIEGDRYDYNTVPFREGTPASWTGDLLAWWPNPQE HFRFYQIEGDRYDYNTVPFNEDDPMSWTEDYLAWWPKPME	896 911
] NIPPH-2	RNGFRINLAKPRPGDPAEANGPVYPWRSLRECOGAPVTAS KTAFOLSMAKPRPNSAEESNGPIYAFENLRACEEAPPSAA	856 871
NIPPH-2 NIPPH-1	EELEPAPSLPRPLPATVGVTQPYLDRLGYRRTDHDDPAFK EELQAVESSPKFNPNAIGVPQPYLNKLNYRRTDHEDPRVK	816 831
NIPH-2 NIPH-1	RAWGRFDSAVTGPNGACLPAFCDADRPDAYTALVTATLGG RAWGRFDSVITGPNGACVPAFCDDQSPDAYSAYVLASLAG	776 791

FIGURE 2C



